TRANSACTIONS

OF THE

American Society of Civil Engineers

INDEX

VOLUME LXXV

DECEMBER, 1912

SUBJECT INDEX, PAGE 1200

AUTHOR INDEX, PAGE 1207

Titles of papers are in quotation marks when given with the author's name.

VOLUME LXXV

SUBJECT INDEX

ADDRESSES.

"Address at the 44th Annual Convention, Seattle, Washington, June 25th, 1912." John A. Ockerson. 1030.

APPRAISAL.

See **VALUATION.**

BEAMS.

"Faults in the Theory of Flexure, and an Epitome of Certain I-Beam Tests Made at Ambridge, Pa." Henry S. Prichard. (With Discussion.) 895.

BLASTING.

— for the Laramie-Poudre Tunnel. 739.

— rock in construction of Morena Rock Fill Dam. 45.

BREAKWATERS.

"How to Build a Stone Jetty on a Sand Bottom in the Open Sea." Henry C. Ripley. (With Discussion.) 1040.

BRIDGES.

"A Four-Track, Center-Bearing, Railroad Draw Span." Louis H. Shoemaker. (With Discussion.) 711.

"Specifications for the Design of — and Subways." Henry B. Seaman. 313. Discussion: S. W. Bowen, Victor H. Cochrane, Albert I. Frye, F. W. Gardiner, Almon H. Fuller, S. M. Swaab, J. B. French, and Charles E. Conover, 353.

"The St. Croix River Bridge." C. A. P. Turner. 1.

CEMENT.

"Final Report of the Special Committee on Uniform Tests of —." 665.

COLUMNS.

"Faults in the Theory of Flexure, and an Epitome of Certain I-Beam Tests Made at Ambridge, Pa." Henry S. Prichard. (With Discussion.) 895.

Specifications for — in bridges and subways. 339.

DAMS.

"Construction of the Morena Rock Fill Dam, San Diego County, California." M. M. O'Shaughnessy. 27. Discussion: George L. Dillman, George F. Maddock, J. D. Galloway, H. Hawgood, and F. B. Maltby, 52.

"Provision for Uplift and Ice Pressure in Designing Masonry —." C. L. Harrison. 142. Discussion: G. M. Braune, Edward Godfrey, Allen Hazen, Charles E. Waddell, Rudolph Hering, M. G. Barnes, Howard J. Cole, M. H. Gerry, Jr., Edward Wegmann, Charles E. Gregory, Orrin L. Brodie, H. F. Dunham, C. Elmore Smith, J. C. Meem, W. J. Douglas, Lindsay Duncan, Arthur P. Davis, William Cain, J. W. Ledoux, and L. J. Le Conte, 146.

"The Analytical Determination of the Dimensions of the Gravity Resisting Parts of Masonry —." Maurice G. Parsons. 877.

"The Halligan Dam: A Reinforced Masonry Structure." G. N. Houston. 112. Discussion: Maurice G. Parsons, Lars R. Jorgensen, S. G. Swigart, Charles B. Buerger, Maurice C. Couchot, L. J. Mensch, and Edward L. Sayers, 129.

DOCKS.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

DRAW-BRIDGES.

"A Four-Track, Center-Bearing, Railroad Draw Span." Louis H. Shoemaker. 711. Discussion: A. H. Markwart, Howard J. Cole, and L. J. Le Conte, 720.

ECONOMICS.

"The Just Value of Monopolies, and the Regulation of the Prices of Their Products." Joseph Mayer. (With Discussion.) 455.

See also **VALUATION.**

EDUCATION.

"Engineering — in its Relation to Training for Engineering Work." Ernest McCullough. 1079. Discussion: N. B. Garver, George B. Pillsbury, F. H. Constant, Arthur B. Green, Alexis Saurbrey, J. X. Cohen, George F. Swain, William J. Boucher, Almon H. Fuller, Walter Hinds Allen, C. H. Stengel, Charles Warren Hunt, Arthur H. Blanchard, Philip W. Henry, John C. L. Rogge, Charles H. Higgins, and Charles B. Buerger, 1092.

ELEVATED RAILROADS.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

ENGINEERING.

"— Education in its Relation to Training for — Work." Ernest McCullough. (With Discussion.) 1079.

ENGINES.

"Rebuilding Three Large Pumping —." Charles B. Buerger. 649.

FERRIES.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

FREIGHT.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

FRICTION.

"Air Resistances to Trains in Tube Tunnels." J. V. Davies. (With Discussion.) 982.

HARBORS.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. 226. Discussion . S. W. Hoag, Jr., H. McL. Harding, James Forgie, Edlow W. Harrison, Charles H. Higgins, M. Lewinson, T. Kennard Thomson, Calvin Tomkins, Ernest C. Moore, Reginald Pelham Bolton, Henry B. Seaman, J. H. Gandolfo, E. De V. Tompkins, A. W. Robinson, and Augustus Smith, 247.

IRRIGATION.

"The Laramie-Poudre Tunnel." Burgis G. Coy. (With Discussion.) 724.

JETTIES.

"How to Build a Stone Jetty on a Sand Bottom in the Open Sea." Henry C. Ripley. 1040. Discussion: L. M. Haupt, Frederic V. Abbot, John Taylor, Morton L. Tower, Howard J. Cole, J. Francis Le Baron, and L. J. Le Conte, 1049.

LAW.

"Retracement-Resurveys—Court Decisions and Field Procedure." N. B. Sweitzer. (With Discussion.) 393.

MASONRY.

"The Analytical Determination of the Dimensions of the Gravity Resisting Parts of — Dams." Maurice G. Parsons. 877.

MEMOIRS OF DECEASED MEMBERS.

Clapp, William Billings. 1148.
Douglas, Benjamin. 1151.
Frazer, Joseph Heckart. 1198.
Gibbs, Nathan Jackson. 1188.
Hadsall, Joseph Canby. 1190.
Hall, Julien Astin. 1153.
Hanna, Walter Scott. 1191.
Herbert, Arthur Powis. 1154.
Hogg, James Breading. 1155.
Keating, Edward Henry. 1159.
Kingman, Lewis. 1161.
Lofland, Henry Fiddeman. 1164
Melcher, Frank Otis. 1166.

North, Edward Payson. 1167.
Olney, La Fayette. 1177.
Sears, Alfred Francis. 1178.
Sears, Walter Herbert. 1180.
Smith, Thomas Guilford. 1182.
Teigen, Thomas William Rostad. 1193.
Turner, Willis Tubbs. 1195.
Watson, William Parsons. 1184.
White, George Howard. 1186.
Wilkins, George Shreve. 1197.

MONOPOLIES.

See **ECONOMICS.**

PAVEMENT.

"Road Construction and Maintenance: Bituminous Surfaces": An Informal Discussion. A. W. Dean and others. 548.

"Road Construction and Maintenance: Drainage and Foundations": An Informal Discussion. James Owen and others. 504.

"Road Construction and Maintenance: Fillers for Brick and Block Pavements": An Informal Discussion. George W. Tillson, Theodor S. Oxholm, E. A. Kingsley, Samuel Whinery, L. P. Sibley, D. E. McComb, W. A. Howell, W. W. Crosby, Will P. Blair, H. B. Pullar, and Arthur H. Blanchard. 527.

"Road Construction and Maintenance: Use of Bituminous Material in Penetration and Mixing Methods": An Informal Discussion. Linn White and others. 572.

PIERS.

See **WHARVES.**

PILES.

Specifications for — used in bridges and subways. 330.

PUMPING ENGINES.

See **ENGINES.**

PUMPS.

"Rebuilding Three Large Pumping Engines." Charles B. Buerger. 649.

RAILROAD TERMINALS.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

RAILROAD YARDS.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

RAILROADS.

"Air Resistances to Trains in Tube Tunnels." J. V. Davies. (With Discussion.) 982.

"Mule-Back Reconnaissances." William J. Millard. (With Discussion.) 12.

RAINFALL.

— and run-off near San Diego, Cal. 29, 54.

REINFORCED CONCRETE.

Specifications for — in bridges and subways. 328, 335.

REPORTS OF COMMITTEES.

"Final Report of the Special Committee on Uniform Tests of Cement." George S. Webster, Richard L. Humphrey, W. B. W. Howe, F. H. Lewis, S. B. Newberry, Alfred Noble, Clifford Richardson, L. C. Sabin, and George F. Swain. 665.

ROADS.

Classification of rock for —. 583.

"Road Construction and Maintenance: Bituminous Surfaces": An Informal Discussion. A. W. Dean, W. D. Uhler, Arthur H. Blanchard, William H. Connell, Fred. E. Ellis, P. P. Sharples, Clifford Richardson, Harold Parker, W. W. Crosby, J. A. Johnston, James Owen, C. J. Bennett, A. S. Brainard, G. Immediato, W. H. Fulweiler, and Amos Schaeffer. 548.

"Road Construction and Maintenance: Drainage and Foundations": An Informal Discussion. James Owen, Paul D. Sargent, Theodor S. Oxholm, F. C. Pillsbury, J. A. Johnston, Clifford Richardson, W. W. Crosby, Arthur H. Blanchard, Samuel Whinery, H. P. Willis, and Will P. Blair. 504.

"Road Construction and Maintenance: Fillers for Brick and Block Pavements": An Informal Discussion. George W. Tillson and others. 527.

"Road Construction and Maintenance. Use of Bituminous Material in Penetration and Mixing Methods": An Informal Discussion. Linn White, Clifford Richardson, A. F. Armstrong, E. H. Thomes, F. C. Pillsbury, Arthur H. Blanchard, W. W. Crosby, G. W. Tillson, R. B. Gage, Frederick Dunham, H. C. Poore, Theodor S. Oxholm, J. W. Howard, Michael Driscoll, Herbert Spencer, P. P. Sharples, H. L. Collier, William H. Connell, T. Hugh Boorman, and A. W. Dow. 572.

Screens used for classifying road material. 580.

RUN-OFF.

Rainfall and — near San Diego, Cal. 29, 54.

STRENGTH OF MATERIALS.

"Faults in the Theory of Flexure, and an Epitome of Certain I-Beam Tests Made at Ambridge, Pa." Henry S. Prichard. 895. Discussion: Charles Worthington, Edward Godfrey, S. Vilar y Boy, H. F. Dunham, Eugene W. Stern, Theodore Belzner, J. P. J. Williams, and Edgar Marburg, 920.

STRESS.

"Faults in the Theory of Flexure, and an Epitome of Certain I-Beam Tests Made at Ambridge, Pa." Henry S. Prichard. (With Discussion.) 895.

SUBWAYS.

See **UNDERGROUND RAILWAYS.**

SURVEYING.

"Mule-Back Reconnaissances." William J. Millard. 12. Discussion: George D. Snyder, Ernest McCullough, and F. Lavis, 19.

"Notes on a Tunnel Survey." Frederick C. Noble. 68. Discussion: George D. Snyder, Robert Ridgway, B. F. Cresson, Jr., S. M. Purdy, and Lazarus White, 80.

"Retracement-Resurveys—Court Decisions and Field Procedure." N. B. Sweitzer. 393. Discussion: W. Newbrough, J. Francis Le Baron, A. M. Strong, Leonard S. Smith, H. V. Hinckley, James L. Davis, A. T. Parsons, and J. C. Carpenter, 420.

TRAFFIC.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

TRAIN RESISTANCE.

"Air Resistances to Trains in Tube Tunnels." J. V. Davies. (With Discussion.) 982.

TRUCKING.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

TUNNELS.

"Air Resistances to Trains in Tube —." J. V. Davies. 982. Discussion: George Gibbs, George H. Pegram, Charles S. Churchill, and L. J. Le Conte, 1018.

Description of Alpine railroad — . 751.

"Notes on a Tunnel Survey." Frederick C. Noble. (With Discussion.) 68.

"The Laramie-Poudre Tunnel." Burgis G. Coy. 724. Discussion: W. C. Hammatt, W. L. Saunders, Lazarus White, O. J. Swensson, B. H. Wait, and C. Raymond Hulsart, 750.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

UNDERGROUND RAILWAYS.

"Air Resistances to Trains in Tube Tunnels." J. V. Davies. (With Discussion.) 982.

"Specifications for the Design of Bridges and Subways." Henry B. Seaman. (With Discussion.) 313.

VALUATION.

"The Appraisal of Public Service Properties as a Basis for the Regulation of Rates." C. E. Grunsky. 770. Discussion: William Brokaw Bamford, James V. Oxtoby, Charles H. Higgins, Henry Floy, J. Martin Schreiber, William J. Boucher, R. D. Coombs, A. H. Van Cleve, and W. Kiersted, 844.

"The Just Value of Monopolies, and the Regulation of the Prices of Their Products." Joseph Mayer. 455. Discussion: P. L. Reed, Maurice G. Parsons, and D. C. Serber, 472.

VENTILATION.

"Air Resistances to Trains in Tube Tunnels." J. V. Davies. (With Discussion.) 982.

WATER.

Comparison of ground — with river —. 706.

WATER FRONT.

"The Problem of the Lower West Side Manhattan — of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

WATER-WORKS.

"A Reinforced Concrete Infiltration Well and Pumping Plant." Frederick N. Hatch. 697. Discussion: William R. Copeland, and H. F. Dunham, 706.

"Construction of the Morena Rock Fill Dam, San Diego County, California". M. M. O'Shaughnessy. (With Discussion.) 27.

WELLS.

"A Reinforced Concrete Infiltration Well and Pumping Plant." Frederick N. Hatch. (With Discussion.) 697.

WHARVES.

"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." B. F. Cresson, Jr. (With Discussion.) 226.

AUTHOR INDEX

ABBOT, FREDERIC V.
How to build a stone jetty. 1050.

ALLEN, WALTER HINDS.
Engineering education. 1118.

ARMSTRONG, A. F.
Road construction and maintenance. 577.

BAMFORD, WILLIAM BROKAW.
Appraisal of public service properties. 844.

BARNES, M. G.
Design of masonry dams. 157.

BELZNER, THEODORE.
Faults in the theory of flexure. 932.

BENNETT, C. J.
Road construction and maintenance. 566.

BLAIR, WILL P.
Road construction and maintenance. 526, 540.

BLANCHARD, ARTHUR H.
Engineering education. 1122.
Road construction and maintenance. 524, 544, 554, 591.

BOLTON, REGINALD PELHAM.
West Side Manhattan water-front. 284.

BOORMAN, T. HUGH.
Road construction and maintenance. 647.

BOUCHER, WILLIAM J.
Appraisal of public service properties. 854.
Engineering education. 1113.

BOWEN, S. W.
Bridge and subway specifications. 353.

BRAINARD, A. S.
Road construction and maintenance. 566.

BRAUNE, G. M.
Design of masonry dams. 146.

BRODIE, ORRIN L.
Design of masonry dams. 174.

BUERGER, CHARLES B.
Engineering education. 1128.
Halligan Dam. 134.
"Rebuilding Three Large Pumping Engines. 649.

CAIN, WILLIAM.
Design of masonry dams. 211.

CARPENTER, J. C.
Retracement-resurveys. 440.

CHURCHILL, CHARLES S.
Air resistances to trains in tunnels. 1024.

CLAPP, WILLIAM BILLINGS.
Memoir of. 1148.

COCHRANE, VICTOR H.
Bridge and subway specifications. 354.

COHEN, J. X.
Engineering education. 1106.

COLE, HOWARD J.
Design of masonry dams. 158.
How to build a stone jetty. 1059.
Railroad draw bridges. 720.

COLLIER, H. L.
Road construction and maintenance. 622.

CONNELL, WILLIAM H.
Road construction and maintenance, 556, 623.

CONOVER, CHARLES E.
Bridge and subway specifications. 370.

CONSTANT, F. H.
Engineering education. 1094.

COOMBS, R. D.
Appraisal of public service properties. 855.

COPELAND, WILLIAM R.
Infiltration well and pumping plant. 706.

COUCHOT, MAURICE C.
Halligan Dam. 135.

COY, BURGIS G.
"The Laramie-Poudre Tunnel." 724.

CRESSON, B F., Jr.
"The Problem of the Lower West Side Manhattan Water-Front of the Port of New York." 226.
Tunnel surveying. 91.

CROSBY, W. W.
Road construction and maintenance. 523, 539, 562, 598.

DAVIES, J. V.
"Air Resistances to Trains in Tube Tunnels." 982.

DAVIS, ARTHUR P.
Design of masonry dams. 207.

DAVIS, JAMES L.
Retracement-resurveys. 437.

DEAN, A. W.
Road construction and maintenance. 548, 570.

DILLMAN, GEORGE L.
Morena Rock Fill Dam. 52.

DOUGLAS, BENJAMIN.
Memoir of. 1151.

DOUGLAS, W. J.
Design of masonry dams. 203.

DOW, A. W.
Road construction and maintenance. 647.

DRISCOLL, MICHAEL.
Road construction and maintenance. 614.

DUNCAN, LINDSAY.
Design of masonry dams. 207.

DUNHAM, FREDERICK.
Road construction and maintenance. 607.

DUNHAM, H. F.
Design of masonry dams. 197.
Faults in the theory of flexure. 930.
Infiltration well and pumping plant. 707.

ELLIS, FRED. E.
Road construction and maintenance. 557.

FLOY, HENRY.
Appraisal of public service properties. 851.

FORGIE, JAMES.
West Side Manhattan water-front. 254.

FRAZER, JOSEPH HECKART.
Memoir of. 1198.

FRENCH, J. B.
Bridge and subway specifications. 363.

FRYE, ALBERT I.
Bridge and subway specifications. 360.

FULLER, ALMON H.
Bridge and subway specifications. 362.
Engineering education. 1117.

FULWEILER, W. H.
Road construction and maintenance. 567.

GAGE, R. B.
Road construction and maintenance. 603.

GALLOWAY, J. D.
Morena Rock Fill Dam. 55.

GANDOLFO, J. H.
West Side Manhattan water-front. 292.

GARDINER, F. W.
Bridge and subway specifications. 361.

GARVER, N. B.
Engineering education. 1092.

GERRY, M. H., Jr.
Design of masonry dams. 160.

GIBBS, GEORGE.
Air resistances to trains in tunnels. 1018.

GIBBS, NATHAN JACKSON.
Memoir of. 1188.

GODFREY, EDWARD.
Design of masonry dams. 147.
Faults in the theory of flexure. 927.

GREEN, ARTHUR B.
Engineering education. 1100.

GREGORY, CHARLES E.
Design of masonry dams. 168.

GRUNSKY, C. E.
"The Appraisal of Public Service Properties as a Basis for the Regulation of Rates." 770.

HADSALL, JOSEPH CANBY.
Memoir of. 1190.

HALL, JULIEN ASTIN.
Memoir of. 1153.

HAMMATT, W. C.
Laramie-Poudre Tunnel. 750.

HANNA, WALTER SCOTT.
Memoir of. 1191.

HARDING, H. McL.
West Side Manhattan water-front. 250.

HARRISON, C. L.
"Provision for Uplift and Ice Pressure in Designing Masonry Dams." 142.

HARRISON, EDLOW W.
West Side Manhattan water-front. 257.

HATCH, FREDERICK N.
"A Reinforced Concrete Infiltration Well and Pumping Plant." 697.

HAUPT, L. M.
How to build a stone jetty. 1049.

HAWGOOD, H.
Morena Rock Fill Dam. 60.

HAZEN, ALLEN.
Design of masonry dams. 153.

HENRY, PHILIP W.
Engineering education. 1125.

HERBERT, ARTHUR POWIS.
Memoir of. 1154.

HERING, RUDOLPH.
Design of masonry dams. 157.

HIGGINS, CHARLES H.
Appraisal of public service properties. 848.
Engineering education. 1126.
West Side Manhattan water-front. 265.

HINCKLEY, H. V.
Retracement-resurveys. 436.

HOAG, S. W., Jr.
West Side Manhattan water-front. 247.

HOGG, JAMES BREADING.
Memoir of. 1155.

HOUSTON, G. N.
"The Halligan Dam: A Reinforced Masonry Structure." 112.

HOWARD, J. W.
Road construction and maintenance. 612.

HOWE, W. B. W.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.

HOWELL, W. A.
Road construction and maintenance. 539.

HULSART, C. RAYMOND.
Laramie-Poudre Tunnel. 765.

HUMPHREY, RICHARD L.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.

HUNT, CHARLES WARREN.
Engineering education. 1121.

IMMEDIATO, G.
Road construction and maintenance. 567.

JOHNSTON, J. A.
Road construction and maintenance. 510, 563.

JORGENSEN, LARS R.
Halligan Dam. 131.

KEATING, EDWARD HENRY.
Memoir of. 1159.

KIERSTED, W.
Appraisal of public service properties. 861.

KINGMAN, LEWIS.
Memoir of. 1161.

KINGSLEY, E. A.
Road construction and maintenance. 535.

LAVIS, F.
Mule-back reconnaissances. 20.

LE BARON, J. FRANCIS.
How to build a stone jetty. 1059.
Retracement-resurveys. 424.

LE CONTE, L. J.
Air resistances to trains in tunnels. 1025.
Design of masonry dams. 216.
How to build a stone jetty. 1067.
Railroad draw bridges. 720.

LEDOUX, J. W.
Design of masonry dams. 213.

LEWINSON, M.
West Side Manhattan water-front. 267.

LEWIS, F. H.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.

LOFLAND, HENRY FIDDEMAN.
Memoir of. 1164.

McCOMB, D. E.
Road construction and maintenance. 539.

McCULLOUGH, ERNEST.
"Engineering Education in its Relation to Training for Engineering Work." 1079.
Mule-back reconnaissances. 20.

MADDOCK, GEORGE F.
Morena Rock Fill Dam. 53.

MALTBY, F. B.
Morena Rock Fill Dam. 61.

MARBURG, EDGAR.
Faults in the theory of flexure. 954.

MARKWART, A. H.
Railroad draw bridges. 720.

MAYER, JOSEPH.
"The Just Value of Monopolies, and the Regulation of the Prices of Their Products." 455.

MEEM, J. C.
Design of masonry dams. 202.

MELCHER, FRANK OTIS.
Memoir of. 1166.

MENSCH, L. J.
Halligan Dam. 135.

MILLARD, WILLIAM J.
"Mule-Back Reconnaissances." 12.

MOORE, ERNEST C.
West Side Manhattan water-front. 280.

NEWBERRY, S. B.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.

NEWBROUGH, W.
Retracement-resurveys. 420.

NOBLE, ALFRED.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.

NOBLE, FREDERICK C.
"Notes on a Tunnel Survey." 68.

NORTH, EDWARD PAYSON.
Memoir of. 1167.

OCKERSON, JOHN A.
"Address at the 44th Annual Convention, Seattle, Washington, June 25th, 1912." 1030.

OLNEY, LA FAYETTE.
Memoir of. 1177.

O'SHAUGHNESSY, M. M.
"Construction of the Morena Rock Fill Dam, San Diego County, California." 27.

OWEN, JAMES.
Road construction and maintenance. 504, 565.

OXHOLM, THEODOR S.
Road construction and maintenance. 509, 534, 610.

OXTOBY, JAMES V.
Appraisal of public service properties. 846.

PARKER, HAROLD.
Road construction and maintenance. 562.

PARSONS, A. T.
Retracement-resurveys. 439.

PARSONS, MAURICE G.
Halligan Dam. 129.
"The Analytical Determination of the Dimensions of the Gravity Resisting Parts of Masonry Dams." 877.
Value of monopolies. 474.

PEGRAM, GEORGE H.
Air resistances to trains in tunnels. 1021.

PILLSBURY, F. C.
Road construction and maintenance. 510, 586.

PILLSBURY, GEORGE B.
Engineering education. 1093.

POORE, H. C.
Road construction and maintenance. 609.

PRICHARD, HENRY S.
"Faults in the Theory of Flexure, and an Epitome of Certain I-Beam Tests Made at Ambridge, Pa." 895.

PULLAR, H. B.
Road construction and maintenance. 543.

PURDY, S. M.
Tunnel surveying. 97.

REED, P. L.
Value of monopolies. 472.

RICHARDSON, CLIFFORD.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.
Road construction and maintenance. 512, 561, 570.

RIDGWAY, ROBERT.
Tunnel surveying. 91.

RIPLEY, HENRY C.
"How to Build a Stone Jetty on a Sand Bottom in the Open Sea." 1040.

ROBINSON, A. W.
West Side Manhattan water-front. 300.

ROGGE, JOHN C. L.
Engineering education. 1126.

SABIN, L. C.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.

SARGENT, PAUL D.
Road construction and maintenance. 508.

SAUNDERS, W. L.
Laramie-Poudre Tunnel. 751.

SAURBREY, ALEXIS.
Engineering education. 1103.

SAYERS, EDWARD L.
Halligan Dam. 137.

SCHAEFFER, AMOS.
Road construction and maintenance. 569.

SCHREIBER, J. MARTIN.
Appraisal of public service properties. 853.

SEAMAN, HENRY B.
"Specifications for the Design of Bridges and Subways." 313.
West Side Manhattan water-front. 290.

SEARS, ALFRED FRANCIS.
Memoir of. 1178.

SEARS, WALTER HERBERT.
Memoir of. 1180.

SERBER, D. C.
Value of monopolies. 477.

SHARPLES, P. P.
Road construction and maintenance. 559, 620.

SHOEMAKER, LOUIS H.
"A Four-Track, Center-Bearing, Railroad Draw Span." 711.

SIBLEY, L. P.
Road construction and maintenance. 537.

SMITH, AUGUSTUS.
West Side Manhattan water-front. 303.
SMITH, C. ELMORE.
Design of masonry dams. 199.
SMITH, LEONARD S.
Retracement-resurveys. 429.
SMITH, THOMAS GUILFORD.
Memoir of. 1182.
SNYDER, GEORGE D.
Mule-back reconnaissances. 19.
Tunnel surveying. 80.
SPENCER, HERBERT.
Road construction and maintenance. 615.
STENGEL, C. H.
Engineering education. 1120.
STERN, EUGENE W.
Faults in the theory of flexure. 930.
STRONG, A. M.
Retracement-resurveys. 427.
SWAAB, S. M.
Bridge and subway specifications. 363.
SWAIN, GEORGE F.
Engineering education. 1110.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.
SWEITZER, N. B.
"Retracement-Resurveys—Court Decisions and Field Procedure." 393.
SWENSSON, O. J.
Laramie-Poudre Tunnel. 763.
SWIGART, S. G.
Halligan Dam. 132.
TAYLOR, JOHN.
How to build a stone jetty. 1052.
TEIGEN, THOMAS WILLIAM ROSTAD.
Memoir of. 1193.
THOMES, E. H.
Road construction and maintenance. 580.
THOMSON, T. KENNARD.
West Side Manhattan water-front. 268.
TILLSON, GEORGE W.
Road construction and maintenance. 527, 545, 603.
TOMKINS, CALVIN.
West Side Manhattan water-front. 273.

TOMPKINS, E. De V.
West Side Manhattan water-front. 296.
TOWER, MORTON L.
How to build a stone jetty. 1057.
TURNER, C. A. P.
"The St. Croix River Bridge." 1.
TURNER, WILLIS TUBBS.
Memoir of. 1195.
UHLER, W. D.
Road construction and maintenance. 551.
VAN CLEVE, A. H.
Appraisal of public service properties. 856.
VILAR y BOY, S.
Faults in the theory of flexure. 929.
WADDELL, CHARLES E.
Design of masonry dams. 155.
WAIT, B. H.
Laramie-Poudre Tunnel. 764.
WATSON, WILLIAM PARSONS.
Memoir of. 1184.
WEBSTER, GEORGE S.
"Final Report of the Special Committee on Uniform Tests of Cement." 665.
WEGMANN, EDWARD.
Design of masonry dams. 162.
WHINERY, SAMUEL.
Road construction and maintenance. 524, 537.
WHITE, GEORGE HOWARD.
Memoir of. 1186.
WHITE, LAZARUS.
Laramie-Poudre Tunnel. 761.
Tunnel surveying. 99.
WHITE, LINN.
Road construction and maintenance. 572.
WILKINS, GEORGE SHREVE.
Memoir of. 1197.
WILLIAMS, J. P. J.
Faults in the theory of flexure. 932.
WILLIS, H. P.
Road construction and maintenance. 525.
WORTHINGTON, CHARLES.
Faults in the theory of flexure. 920.